AMENDMENTS TO THE CLAIMS

This listing will replace all prior versions, and listings, of claims in the application:

1. (Currently amended) A [[P]]pseudo-isothermal chemical reactor ~~(1)~~ for heterogeneous chemical reactions comprising:

a substantially cylindrical shell ~~(2)~~ having an axis (Z-Z)[[,]];

a reaction zone ~~(5)~~ defined in said shell; ~~(2)~~ and

at least one heat exchange unit ~~(6)~~, supported in said reaction zone ~~(5)~~ and comprising a plurality of heat exchangers ~~(7)~~, ~~characterized in that~~

wherein at least one of said heat exchangers ~~(7)~~ consists of a coil obtained from a single tubular element ~~and has substantially parallelepiped, flattened overall dimensions~~ which extends in a serpentine manner substantially in a plane parallel to said axis (Z-Z) of the shell.

2. (Currently amended) The [[C]]chemical reactor according to claim 1, ~~characterized in that~~ wherein said heat exchanger ~~(7)~~ comprises a plurality of tubular, parallel rectilinear portions ~~(8)~~, connected together head-to-tail by a corresponding plurality of curvilinear fitting portions ~~(9)~~.

3. (Currently amended) The [[C]]chemical reactor according to claim 2, ~~characterized in that~~ wherein said tubular rectilinear portions ~~(8)~~ are of equal length and have coplanar longitudinal axes.

4. (Currently amended) The [[C]]chemical reactor according to claim 3, ~~characterized in that~~ wherein said curvilinear portions ~~(9)~~ are semicircular.

5. (Currently amended) The [[C]]chemical reactor according to claim 3, ~~characterized in that~~ wherein said rectilinear portions ~~(8)~~ of said coil exchangers ~~(7)~~ extend radially in said reaction zone ~~(5)~~.

6. (Currently amended) The [[C]]chemical reactor according to claim 3, ~~characterized in that~~ wherein said rectilinear portions ~~(8)~~ of said coil exchangers ~~(7)~~ extend in said reaction zone ~~(5)~~ substantially parallel to the axis (Z-Z) of the shell ~~(2)~~.

7. (Currently amended) The [[C]]chemical reactor according to claim 1, ~~characterized in that~~ wherein said heat exchange unit comprising a plurality of said coil heat exchangers ~~(7)~~ has a substantially cylindrical configuration, coaxial and concentric to said reaction zone ~~(5)~~, in which it is supported, ~~in said heat exchange unit (6)~~ the coil heat exchangers ~~(7)~~ being arranged radially in said heat exchange unit.

8. (Currently amended) The [[C]]chemical reactor according to claim 7, ~~characterized in that~~ wherein ~~in said heat exchange unit (6)~~, the coil heat exchangers ~~(7)~~ are arranged radially in said heat exchange unit in many coaxial and concentric arrangements.

9. (Currently amended) The [[C]]chemical reactor according to ~~any one of the previous~~ claim[[s]] 1, ~~characterized in that,~~ wherein at least one of said coil heat exchangers ~~(7)~~ comprises an additional duct ~~(18)~~ supplying operating heat exchange fluid, associated with the exchanger itself in a predetermined intermediate position of the respective coil.

10. (Currently amended) The [[C]]chemical reactor according to claim 3, ~~characterized in that~~ wherein said rectilinear portions ~~(8)~~ of said coil exchangers ~~(7)~~ extend parallel to a diameter of the shell ~~(2)~~.

11. (Currently amended) The [[C]]chemical reactor according to claim 10, ~~characterized in that~~ wherein said coil exchangers ~~(7)~~ are arranged on imaginary equidistant parallel planes.

12. (Currently amended) The [[C]]chemical reactor according to claim 11, ~~characterized in that~~ wherein said curvilinear fitting portions ~~(9)~~ are tangent to imaginary cylindrical surfaces ~~(22,23, 24,25, 26,27)~~ having a radius equal to the inner radius of the shell ~~(2)~~ and centres all arranged on the same diameter ~~(D1)~~ of the shell ~~(2)~~.